Trepang exploitation in the Philippines: Updated information

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Introduction

The trepang, or dried holothurian, market is almost exclusive to Chinese culture. It has been a major export commodity from Japan and Southeast Asia to China for at least 300 years. Interestingly, no trepang is consumed by the producers. It has been developed as an export-oriented commodity from the beginning, and the market plays an important role in holothurian resource management.

Since 1997, I have been conducting field research as an ecological anthropologist on marine resource exploitation, its trade networks, human flows, and social changes in a community in the southern part of Palawan Island.[2] Every September or October I examine trepang market prices from a leading middleman in Puerto Princesa City. This is one of the most active trepang entrepôts in the Philippines. This article has two objectives. One is to share current trepang trade data with other researchers who are interested in holothurian studies, and the other, is to encourage further research in trepang consumption and production.

Trepang exports from the Philippines

Trepang appeared in Philippine trade statistics in 1970 for the first time since World War II. Export statistics from 1970 to 2000 are illustrated in Figure 1. Not less than 80 per cent of the quantity has been exported to Hong Kong.

In 1970, the Philippines shipped only 12 metric tonnes (t) of trepang, which increased to nearly 100 t in 1976, 226 t in 1977 and as much as 647 t in 1978. Between 1978 and 1982, the Philippines annually exported more than 500 t with the exception of 1979. Surprisingly, the Philippines has maintained a 1000-tonne export level since 1983, a level achieved only by the Philippines and probably Indonesia.[3]

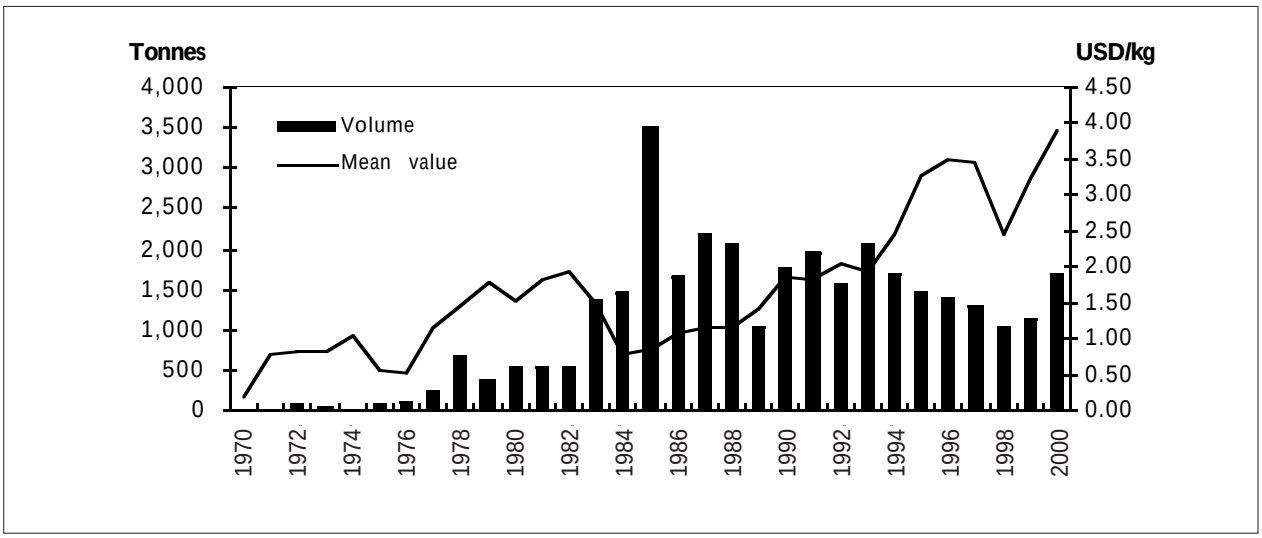

Figure 1. **Volume and mean value of trepang exports from the Philippines, 1970–2000**

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2. The main portion of the data used in the present paper was collected during fieldwork in the Philippines in July 1997, July to October 1998, August to September 2000, and September 2001. At the time of the research, USD 1.00 equaled to: PHP 29 in 1997, PHP 44 in 1998, PHP 40 in 1999, PHP 45 in 2000 and PHP 51 in 2001 respectively.

3. According to the FAO Yearbook of the Fishery Statistics, in 1988 Indonesia and the Philippines were the two largest exporters of trepang in the world. In that year, both countries shared 44.4 per cent of the total volume traded. Both exported more than 1000 t for the first time in 1983 and have maintained this level. According to available statistics, Indonesia reached peak production in 1988. Unfortunately, Indonesian statistics are not available beyond 1988 and only a few studies have dealt with Indonesian trepang fishing, which makes it difficult to compare the Indonesian trepang industry with that of the Philippines (see Vail and Russell 1989; Tuwo and Conand 1992, 1996; and Moore 1998 for Indonesian trepang information).

In 1985, the Philippines reached its peak production of 3499 t worth almost 3 million US dollars. After that year the export volume decreases, especially in 1989 with 1022 t and in 1998 with 1040 t, marking the lowest export volume. However, the export volume seems to be recovering and was 1692 t in 2000. Interestingly, the average price per kilogram since 1984 has increased except for a sharp drop in 1998. According to Philippine trepang exporters, this drop was due to one of the heaviest floodings of the Yangtze River. That flood in southern and central China, from June to September, was so severe that even a 30 per cent depreciation of the Philippine peso against the US dollar, which normally helps exports, did not help in maintaining the level of exports.

One of the exporters in Manila said he had a lot of trepang stock in September 1998, especially over 40 t of 'legs' (*Thelenota anax*), and he had to control his stock by discontinuing purchases and down-pricing for a while. Thus, we understand that there is a strong economic relationship between the Chinese market and Philippine production.

Trepang trade networks in the Philippines

Of the 1200 holothurian species known today, there are at least 24 commercially exploited species in the Philippines (Table 1). Of those identified, almost half belong to the genera *Holothuria*. Other genera traded in the Philippines are *Actinopyga*, *Bohadschia*, *Stichopus* and *Thelenota*.

Almost all the islands in the archipelagos produce trepang. Among them, Zamboanga City in Mindanao and Puerto Princesa City in Palawan are the largest entrepôts in the Philippines (Trinidad-Roa 1987).

There are four major trepang exporters in the Philippines (Schoppe 2000), all of whom are Chinese-Filipino, who also deal with other dried marine products such as sharks fin and dried sea horse. The main market for these is China as well.[4] All of the exporters have close business ties with wholesale importers in Hong Kong and, for some, in Singapore. They have branches or agents in other parts of the Philippines (henceforth, called A, B, C and D). The exporters A, B and C have their branches in Puerto Princesa City (shown as middlemen A', B' and C' in this paper). Strong business ties exist between exporter D and the middleman D' in Puerto Princesa City.[5]

The purchasing value of the four middlemen remains competitively similar. They prepare the price list for the price inquiry from their customers, on which Table 1 is based. Generally, larger trepangs with a thick body wall are preferred. The prices listed are for well dried and well-shaped top-quality specimens.

Trepang is further categorised into three classes according to size. Only *Holothuria scabra*, *H. fuscogilva*, and *H. nobilis* are classified by individual weight, which is estimated by hand. The second type of classification is related to length, as measured against one's middle finger. Less valuable species are not classified either by weight or length. For weight and length, clothing size classifications — XL, L, M, S, and XS — are employed. The common categorisation uses a quartile classification. Only the top two most valuable species have five levels of classification. Three categories are used to classify *lawayan* (13) and *H. atra*, while two are used for *H. edulis*.

In addition to the categories indicated in the list, there is a common practice of categorising those considered as 'reject' or 'class B' in real transactions. Wet, ill-shaped, or half-cooked product is classified as 'reject', and is valued at about 40 per cent of the maximum price. However, not all species are categorised this way. Of the 15 purchase receipts from middlemen A', B', and C', only *H. fuscogilva*, *H. nobilis*, *H. scabra*, *Stichopus hermanni*, *S. horrens* and *Actinopyga* spp., all of which are expensive species, have the 'reject' category.

Trepang price changes in the Philippines

Table 2 shows trepang price changes from 1998 to 2001. Two trnds are dicernable from the table: commercial species expansion and decreased prices after September 2000.

Between October 1999 and September 2000, *patola red* (16) and *patola white* (24) became newly classified. They were formerly classified as just *patola* (19). Surprisingly, two species *hudhud payat* (10) and *lawayang Hong Kong* (12) gained new commercial value after September 2000.

There is quite a difference in price among the three *patolas* and it is reasonable to differentiate them. However, the price differences of *hudhud* (9) and its sub-classified *hudhud payat* and those of *lawayan* (13) and *lawayang Hong Kong* are not considerable.

4. A major exporter branch in Puerto Princesa City bought 12 t of dried trepang, sharks fin, dried sea horse and shells during the month of September 1999, which had a value of 5 million pesos, equivalent to USD 125,000.
5. Aside from the major middlemen who affiliate with the exporter in Manila, there are innumerable small-scale trepang buyers in Puerto Princesa City, locally called 'buy-and-sell', who resell their stock with a little margin to the major middlemen in the city.

Table 1. Trepang names and prices in Puerto Princesa City (per kilogram)

No.	Vernacular name	Scientific name[1]	Size assesment		Size	Price per kg	
			Weight[2]	Length[3]		PHP	USD[4]
1	putian	*H. scabra*	15		XL	1,900	37.3
			20		L	1,500	29.4
			40		M	1,100	21.6
			60		S	700	13.7
			80		XS	650	12.7
2	susuan	*H. fuscogilva*	3-4		XL	1,800	35.3
			5-6		L	1,700	33.3
			7-8		M	1,100	21.6
			8-10		S	800	15.7
			11-15		XS	500	9.8
3	buliq-buliq	*Actinopyga* spp.		3" up	L	1,100	21.6
				2.5"	M	800	15.7
				1"-2.5"	S	600	11.8
				(<1")	XS	400	7.8
4	hanginan	*S. horrens*		3.1" up	L	1,100	21.6
		S. hermanni		2.5"-3"	M	800	15.7
				2"-2.5"	S	600	11.8
				(<2")	XS	300	5.9
5	bakungan	*H. nobilis*	5-6		L	1,000	19.6
			7-8		M	900	17.6
			8-10		S	700	13.7
			11-15		XS	500	9.8
6	katro kantos	*S. chloronotus*		na		1,000	19.6
7	tinikan	*T. ananas*		na		700	13.7
8	khaki	*A. mauritiana*		3" up	L	650	12.7
				2.5"	M	450	8.8
				1.5"-2.5"	S	280	5.5
				1"-1.5"	XS	120	2.4
9	hudhud	*A. echinites*		na		650	12.7
10	hudhud payat*	?				450	8.8
11	leopard	*B. argus*		na		420	8.2
12	lawayan Hong Kong*	*Bohadschia* sp.		na		320	6.3
13	lawayan	*Bohadschia* spp.		4" up	L	300	5.9
				2.5"	M	270	5.3
				(<2.5")	S	170	3.3
14	red beauty	*H. edulis*		na	L	240	4.7
					S	200	3.9
15	white beauty	?		na		230	4.5
16	patola red**	?		na		230	4.5
17	brown beauty	?		na		220	4.3
18	black beauty	*H. atra*		5" up	L	200	3.9
				4"-5"	M	120	2.4
				2"-4"	S	80	1.6
19	patola	*H. leucospilota*		na		200	3.9
20	legs	*T. anax*		na		190	3.7
21	sapatos	*H. fuscopunctata*		na		140	2.7
22	bulaklak	*B. graeffei*		na		90	1.8
23	patola white**	?		na		20	0.4
24	labuyuq	?		na		20	0.4

Source: Price list of Exporter A (as of September 2001)

1. A, B, H, S and T in the *Scientific name* column are genera *Actinopyga, Bohadschia, Holothuria, Stichopus* and *Thelenota,* respectively.
2. The nominal number of individuals needed for one kg; this is assessed by weighing each specimen by hand.
3. Assessment in relation to length of middle finger. The brackets indicate figures inferred by the author. Not applicable (na) indicates the size was not assessed.
4. At the date of research, USD 1.00 ≈ PHP 51.00.

* Did not appear in the September 2000 list

** Did not appear in the October 1999 list.

Table 2. **Changes in trepang prices in Puerto Princesa City 1998–2001 (USD/kg)[1]**

No.	Vernacular name	Scientific name	Size assesment		Size	Price (USD/kg)			
			Weight[2]	Length[3]	label[4]	1998	1999	2000	2001
1	putian	*H. scabra*	15		XL	29.7	35.0	36.7	37.3
			20		L	22.8	27.5	31.1	29.4
			40		M	16.0	18.8	24.4	21.6
			60		S	9.1	11.3	16.7	13.7
			80		XS	6.9	8.8	12.2	12.7
2	susuan	*H. fuscogilva*	3-4		XL	21.7	30.0	35.6	35.3
			5-6		L	20.5	27.5	34.4	33.3
			7-8		M	17.1	22.5	26.7	21.6
			8-10		S	12.6	15.0	17.8	15.7
			11-15		XS	9.1	12.5	12.4	9.8
3	buliq-buliq	*Actinopyga* spp.		3" up	L	14.8	20.0	24.4	21.6
				2.5"	M	10.3	13.8	15.6	15.7
				1"-2.5"	S	8.0	11.3	11.6	11.8
				(<1")	XS	5.7	10.0	10.4	7.8
4	hanginan	*S. horrens*		3.1" up	L	12.6	20.0	21.1	21.6
		S. hermanni		2.5"-3"	M	9.1	12.5	14.4	15.7
				2"-2.5"	S	6.9	10.0	11.6	11.8
				(<2")	XS	4.1	6.3	6.7	5.9
5	bakungan	*H. nobilis*	5-6		L	14.8	17.5	26.7	19.6
			7-8		M	12.6	15.0	22.2	17.6
			8-10		S	10.3	11.3	17.8	13.7
			11-15		XS	9.1	8.8	11.1	9.8
6	katro kantos	*S. chloronotus*			na	16.0	18.8	23.3	19.6
7	tinikan	*T. ananas*			L	10.3	13.3	14.4	13.7
					S	-	-	10.0	-
8	khaki	*A. mauritiana*		3" up	L	8.2	11.3	14.4	12.7
				2.5"	M	5.0	7.5	11.1	8.8
				1.5"-2.5"	S	3.7	6.3	8.0	5.5
				1"-1.5"	XS	2.3	3.0	4.0	2.4
9	hudhud	*A. echinites*			na	9.6	11.3	15.6	12.7
10	hudhud payat	?			na	-	-	-	8.8
11	leopard	*B. argus*			na	5.3	7.0	8.4	8.2
12	lawayan Hong Kong				na	-	-	-	6.3
13	lawayan	*Bohadschia* spp.		4" up	L	3.7	5.5	6.9	5.9
				2.5"	M	2.7	5.0	6.2	5.3
				(<2.5")	S	1.8	3.0	4.0	3.3
14	red beauty	*H. edulis*		?	L	2.3	3.3	5.3	4.7
				?	S	-	-	4.9	3.9
15	white beauty	?			na	2.5	4.0	5.6	4.5
16	patola red	?			na	-	-	5.6	4.5
17	brown beauty	?			na	2.3	3.3	5.3	4.3
18	black beauty	*H. atra*		5" up	L	2.5	4.0	5.3	3.9
				4"-5"	M	1.6	2.1	3.1	2.4
				2"-4"	S	0.7	1.0	2.2	1.6
19	patola	*H. leucospilota*			na	1.8	3.3	4.9	3.9
20	legs	*T. anax*			na	3.4	4.3	4.9	3.7
21	sapatos	*H. fuscopunctata*			na	1.8	2.8	2.9	2.7
22	bulaklak	*B. graeffei*			na	1.4	2.1	2.4	1.8
23	labuyuq	?			na	0.6	1.0	1.7	0.4
24	patola white	?			na	-	-	0.4	0.4

Source: Akamine (2001) and price list of Exporter A.

1. Prices given by middleman A' in Puerto Princesa City in October 1998, October 1999, September 2000 and September 2001. USD 1 equals to PHP 44 in 1998, PHP 40 in 1999, PHP 45 in 2000, and PHP 51 in 2001, respectively.
2. The nominal number of pieces needed for one kg; this is assessed by weighing the trepang by hand.
3. Assessment in relation to length of middle finger. The brackets indicate figures inferred by the author.
4. Not applicable (na) indicates no size given.

Payat means 'thin' or 'skinny' and *hudhud payat* seems thinner than the ordinary *hudhud*. I have no clear idea what *Hong Kong* denotes but it is a fatty species. The reason for sub-classifying *hudhud* and *lawayang* into two classifications is unknown. According to middleman A', their Manila representative ordered the price changes and species classification and that information would be derived from importers in Hong Kong.

Every year since 1998, a new species becomes popular and gains commercial value (Akamine 2001). However, the value of most species has decreased since 2000. Even though some prices increased, the profit from these species did not increase because of the 113 per cent depreciation of the PHP against the USD between September 2000 and September 2001. Two examples are *susuan* and *tinikan* whose values in PHP increased but whose values in USD decreased. For this reason, it is clear that demand for *putian* and *hanginan* was tremendous because it offset the value of the depreciating PHP.

Furthermore, the observed trend should be examined in a broader perspective. Trinidad-Roa, a marine biologist, reported in 1986 that only 16 trepang species were traded in the Philippines (Trinidad-Roa 1987), with no mention of *red beauty* (14), *white beauty* (15), *bulaklak* (22) and *labuyuq* (23), possibly because they had no commercial value at that time. These four species are of a relatively lower grade, though the new commercial species after September 2001, *hudhud payat* (10) and *lawayang Hong Kong* (12) are relatively valuable species.

Concluding notes

There are no concrete data available to compare market price changes in other trepang producing countries. A comparative study is necessary to understand global expansion of trepang consumption as well as production. For example, there are no precise studies of how trepang is cooked. To my understanding, *H. scabra* and *H. fuscogilva* are the most popular species sold in Hong Kong and Singapore retail markets and cooked at the restaurants; *Actinopyga echinites* is a most popular Shanghai dish; *Actinopyga* spp. is commonly consumed in the Philippines; *Stichopus horrens and S. hermanni* are the most popular species in the Korean market, where they are cooked with shrimp and shellfish meat. This is called '*samsun*' or '*samseon*' in Korea.

The species mentioned above are expensive. How are the cheaper priced species consumed? Some are cooked together with vegetables and meat, sometimes in a hot pot style dish. High value species are used as the main item in a dish while low value species are just one of the many ingredients. In addition, the latter is seldom seen in retail markets. The Philippine trepang industry produces more and more low value species for export and therefore we should look more closely at how those cheaper species are traded and consumed.

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References

Akamine, J. 2001. Holothurian exploitation in the Philippines: Continuities and discontinuities. Tropics 10(4):591–607.

Moore, A. 1998. Preliminary notes on the exploitation of holothurians in the new Wakatobi Marine National Park, Sulawesi, Indonesia. SPC Beche-de-mer Information Bulletin 10:31–33.

Schoppe, S. 2000. Sea cucumber fishery in the Philippines. SPC Beche-de-mer Information Bulletin 13:10–12.

Trinidad-Roa, M. J. 1987. Beche-de-mer fishery in the Philippines. Naga, the ICLARM Quarterly October 1987, 15–17.

Tuwo, A. and C. Conand. 1992. Developments in beche-de-mer production in Indonesia during the last decade. SPC Beche-de-mer Information Bulletin 4:2–3.

Tuwo, A. and C. Conand. 1996. Commercial holothurians in southwest Sulawesi (preliminary observations). Torani Bulletin Ilmu Kelautan 6(2):129–134.

Vail, L. and B. Russell. 1989. Indonesian fishermen of Australia's northwest coast. Australian Natural History 23:210–219.